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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/692,114

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Igor Y. Khandros

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03/10/2005

FORMFACTOR, INC.  
LEGAL DEPARTMENT  
2140 RESEARCH DRIVE  
LIVERMORE, CA 94550

EXAMINER

ABRAMS, NEIL

ART UNIT

PAPER NUMBER

2839

DATE MAILED: 03/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/692,114

Applicant(s)

KHANDROS

Examiner

Neil Abrams

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 November 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 22-80 is/are pending in the application.
- 4a) Of the above claim(s) 22-33, 49-62, 71-74, 76-79 is/are withdrawn from consideration.
- 5) ☒ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 34-47, 63-69, 75, 80 is/are rejected.
- 7) ☒ Claim(s) 48, 70 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftperson's Patent Drawing Review (PTO-948) 6 sheets
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_ 6 sheets
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

Spec. objected to, pages 1, 2, 3, the parent case portion should be located directly below the title. Unnecessary listing should be deleted. Page 1, line 5, and elsewhere, all such blanks must be filled in. For SN 08/452,255, pat. No. must be added.

Drawings objected to, fig. 7 is seen to show the space transformer with <sup>tiles</sup>~~tiles~~, for clarity, the first terminals (520 in fig. 5) should be shown on part 704 and a wafer (508) should be shown above the probes 710. This is so that in at least one fig., the <sup>tiles</sup>~~tiles~~ to wafer relationship be shown.

In addition to Replacement Sheets containing the corrected drawing figure(s), applicant is required to submit a marked-up copy of each Replacement Sheet including annotations indicating the changes made to the previous version. The marked-up copy must be clearly labeled as "Annotated Sheets" and must be presented in the amendment or remarks section that explains the change(s) to the drawings. See 37 CFR 1.121(d)(1). Failure to timely submit the proposed drawing and marked-up copy will result in the abandonment of the application.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims ~~34~~<sup>34</sup>, 35, 36, 37, 38, 63 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 2 of U.S. Patent No. 6,050,829. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims listed above define obvious variations of parent case claim 2, that differ mainly by omission of limitations.

Non-elected claims should be cancelled in next response.

Claims 75 and 80 are objected to they should be rewritten in independent form since claims 71, 76 are withdrawn. Also should "made" be – tested – for greater accuracy. Claim 67 objected to line 2 after of said – first --- should be added.

Claims 36, 37, 38-40-45 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 34-36 seems intended to be readable on fig. 5 with 504 as first substrate and 506 as second substrate. However, if that is the case none of claims 36, 37, 38, 40-45 are readable on such embodiment. Claim 36 calls for first terminals (520) at a tighter pitch, however in fig. 5, it is the other terminals (522) that are at a tight patch.

Claims 36, 37 call for second terminals to engage the interface (probe card) however in fig. 5, second terminals (524) engage the wafer, not the probe card. Claims 40-45 are similarly found inconsistent with claim 34, as best understood. All of claims

34-48 should be reviewed and correction or clarification provided. Compare to claims 63-70 which are found proper in this regard.

Claims 39-45, 64-67 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

For claim 39, after "substrates" – in said attached condition – should be added to clearly define the intended relationship. Claim 64, similar change required. Other wording could be used.

Claims 75 and 80 are rejected under 35 U.S.C. 102(b) as being anticipated by Beaman 846.

Beaman at 48 and 114 disclose prior art semiconductor devices. These meet claims 75 and 80 limitations since method steps of claims 71, 76 provide no structural distinction.

Claims 34-38, <sup>47</sup>46 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Beaman 846 alone or taken in view of Lum.

For claim 34 Beaman system includes a first substrate 40 (figs. 2, 3, 4, 16) with contact structures 42, a second substrate 60 with first terminals at 106 and second terminals at 64 or 162, the first substrate structures 42 joined to the second substrate terminals 106. Attachment means are shown at 80, 84.

It is clear that substrate 60 would include interconnections to join 106 to 64 or 162 and Beaman therefor is adequate for all limitations. However, these interconnects

are not clearly shown and should the matter be at issue, also obvious to use interconnects like those of Lum for interposers 64, 90 and shown most clearly in fig. 7 at 109. These are necessary to join upper and lower terminals. Claims 35, 36 also met by Beaman. Claims 37, 38, part 68 is read as an interface or probe card with cables 72 joined to a tester. This aspect further suggested by Lum, col. 5, lines 22-40 with probe cards 62. Also obvious to use card 68 of Beaman with such tester as would be a necessary part of the system. For claims 46, 47, contact 42 are wires and may be overcoated with Au, etc see col. 5, lines 65-col. 6, line 5.

Claims 63, 65, 68, 69 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Beaman 846 alone or taken in view of Lum.

Beaman figs. 3, 4, 16) is now applied with part 60 read as a first substrate with contact structures 42 attached at its bottom surface, first terminals 64, 162 on the other side. Interconnections through substrate 60, a second substrate 76 with second terminals 88 for connection to first terminals 64, 162.

Beaman alone is adequate however, the interconnections while essential are not clearly disclosed and Lum is applied as above. Obvious to include such essential interconnections in substrate 60. Claims 65, met by Beaman with dice at 48 in water 50. Claims 68, 69, treated as above.

Claims 34, 35, 36, 39, 63, 64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beaman 654 in view of Hsia.,

Beaman system includes (see figs. 1, 4), a first substrate 49 with contact structures 54, a second substrate 12 with first and second terminals at leadlines 18, 32 and interconnections 14. The substrates are joined but are not clearly shown as attached. Hsia at 32 uses attachment means. Obvious to use such features in Beaman to provide a strong package. Claim 35, 36 met by lowermost substrate 12 terminals as shown in fig. 1, with bottom ones at wider pitch.

For claim 39, note plural substrates 49, fig. 4 and fig. 21 (three substrates). ~~For~~<sup>For</sup> claims 63, 64, part 49 forms a first substrate with contact structures 50, and first terminals 54, interconnects (Fig. 5 at 84) and a second substrate 12 with second terminals at lead lines 18, terminals 50 joined to those at 18. As to attached terms, Hsia applied as above.

Claims 47, 48, 69 and 70 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Beaman 846 alone or taken in view of Lum.

For claims 48, 70 the references are applied as discussed above. The Beaman wires 42 (Figs. 5, 6, 13) are shown to be over coated with material 44 which may be of degrees of rigidity, col. 7, lines 10-20, col. 8, lines 1-5.

While Beaman is not explicit in this regard it seem clear that the material 44 would have greater yield strength than the wires which typically are easily bendable. Note that the claims could be read on a few (two) of the wires 42 surrounded by the entire body 44. Should the matter be at issue, obvious that the body 44 would be formed to support, supply greater yield strength, to the wires. This would be necessary

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to properly position the wires. This rejection is applied to claims 74, 69 in case issues arise as the previous rejections.

Claims 44-45, 66-67 amended to avoid the 35 USC<sup>112</sup> rejections<sup>as</sup> suggested above would overcome prior art. *Changes would be to parent claims.*

Any inquiry concerning this communication should be directed to Neil Abrams at telephone number (571)272-2089.

Abrams/ds

03/05/05

  
NEIL ABRAMS  
EXAMINER  
ART UNIT 322